



Cheyenne Software, Inc.

ARCserve®/Open

The Backup Solution

User Guide

**Automated Unix®-based
data management software
for microcomputers.**

Value Added Software from Cheyenne

ARCserve/Open Addendum

This paper contains last minute corrections and additions to the following sections of the ARCserve/Open Manuals:

Section 2.2 Installing ARCserve/Open (Reference Guide)

This information was added to the ARCserve/Open installation.

There are two versions of the ARCserve Open installation, one for SCO UNIX 3.2.2 and one for 3.2.4. Be sure to use the correct version of the ARCserve/Open installation for your version of SCO UNIX .

The installation procedure installs not only the ARCserve/Open program, but also some associated data files in the `/usr/lib/arcserve/data` directory. As you use ARCserve/Open, these datafiles grow and take up more disk space.

If you are concerned about running out of space on the default file system (disk), you can now specify where to install the data files during installation. You can enter a different path and directory for the data files, or accept the default.

If you want to change the directory where the data files are installed, run the ARCserve installation program again. When you are asked where to put the data files, type a new path and directory name. The old data files will then be copied from the original location on the hard disk to the location you specified.

Section 2.3.4 Maintaining the FTS Database (Reference Guide)

There is an error in this section of the Reference Guide. Both commands say **ftsverify**. The second **ftsverify** should actually be **ftsbuild**.

Also, you may want to run **ftsverify** if your database becomes corrupt, due to a power failure or some other type of disaster.

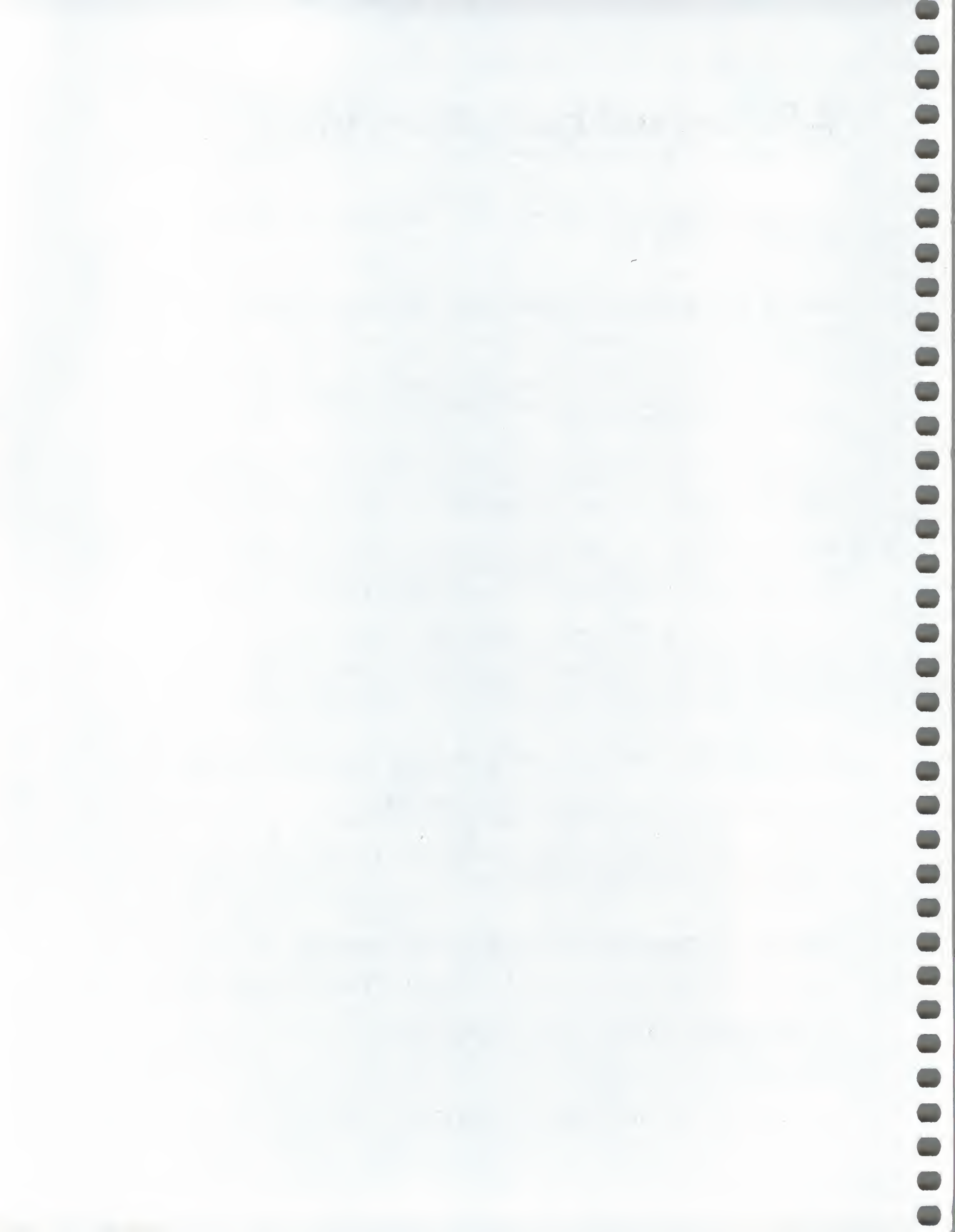
Section 2.1.1 Command Line options (User Manual)

There is an error in this section of the User Manual. The following command:

```
# ARC B myscript          <ENTER>
```

should be:

```
# arcserve -b myscript    <ENTER>
```



ARCserve®/Open User Guide

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Product Support:

If you have any questions regarding the use of this product, please be sure to have your **product serial number** in hand and fill out the **forms** found in the ARCserve/Open Reference Manual. Next, FAX the forms and then call us at:

516-484-3493 FAX 516-484-5110 VOICE Monday through Friday 8am-6:30pm EST

Address any inquiries to:

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The User Guide

This is the *ARCserve/Open User Guide for SCO UNIX*. This guide contains information on how to use the program, what information is required from you, the user, and how to give this information to the program. You will be able to use all of ARCserve/Open's features to manage and protect your data if you follow these instructions.

In addition, there is a *Reference Manual* that contains more technical information about ARCserve/Open such as installation instructions and program theory. If you want to know more about ARCserve/Open, the *Reference Manual* will provide the how and why.

Document Conventions

This guide uses different typefaces and symbols to distinguish between keys, information to be entered, menus, menu options, and fields.

The bracket (< >) symbols enclose a specific key that is to be pressed. For example, the instruction "enter the following at the command line:"

arcserve

<Enter>

means that you should enter arcserve at the command line prompt and then press the **<Enter>** key. As you can see from this example, where you are instructed to enter information, the information to be entered appears on a separate line in **bold courier** type.

UNIX commands, such as **ps**, will appear in bold type wherever they are referenced.

Menus, menu options, lists, and form names appear in *italic type* within the body of the text but not within figures. Form fields appear in ***bold italics*** which sets off these items from the rest of the text and makes them easily distinguishable.

Quotation marks, aside from their normal use, are also used to tell you messages which can appear on the workstation or file server screen.

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1. Introduction to ARCserve/Open

Welcome to the world of ARCserve/Open, the backup solution for SCO UNIX. If you have performed backups in the past, using another backup product or by using UNIX commands (**tar** and **cpio**), you will appreciate the following ARCserve/Open features:

- ***A user-friendly, menu-driven interface*** - To back up data, select *Backup* from a menu. To restore data, select *Restore* from a menu. To specify directories or files, pick them from a graphical tree or enter their names directly into a form.
- ***Forms for specifying job information*** - After entering job information into a form, save it to submit the job. You can have the job start immediately or schedule it to start at a later time.
- ***Unattended Operations*** - Schedule jobs to run on a specific date, at a specific time, and to repeat at random or constant intervals. The ARCserve/Open program does all the scheduling for you, and with more flexibility than **cron**.
- ***Create "scripts" for frequently run jobs*** - Save a job entry form, along with its information, as a script. To run the job again, select the script name from a list.
- ***Quick File Access system*** - ARCserve/Open maintains a database of backup and restore operations. Using this database, you can selectively restore files from a backup session or get version information for a particular file. You can still choose to restore an entire backup session, but this option gives you added flexibility.
- ***File management and tape maintenance options*** - In addition to backup and restore, ARCserve/Open has file management options that help you with file removal (*Purge*) and disk space calculations (*Count*). It also has tape management options such as formatting, testing, resetting, and erasing.
- ***Tape database for tape management*** - When a tape is placed in service and formatted by ARCserve/Open, an entry is made in the tape database. Every time that tape is used, whether it is written to, or read from in a scanning or restore operation, you can choose to add this information to its record. If you change the tape name, the name of the record changes too, and all the old information is kept.

1.1 Terminology

The terms **backup** and **restore** can be used quite differently by data storage companies in the computer industry. Therefore, Cheyenne's definitions are explained here.

- **Backup** is the process of copying files and directories from a hard drive (or file system mounted on the hard drive's file system) to a tape drive. You will also notice that backup and back up appear in this guide. Backup is a noun or adjective. Back up is a verb.
- **Restore** lets you copy files and directories from a tape drive to a hard drive.

Next, the terms **unattended** and **attended** are defined.

- **Unattended** jobs are performed in the background by ARCserve/Open. These jobs are scheduled in queues that are set up on your system.
- **Attended** jobs run in the foreground. These jobs require a dedicated virtual screen and are useful if you want to watch the job's progress.

1.2 Getting Help

Cheyenne prides itself on the level and quality of support it provides for its customers. There are several methods of help available to you, as the following figure illustrates.

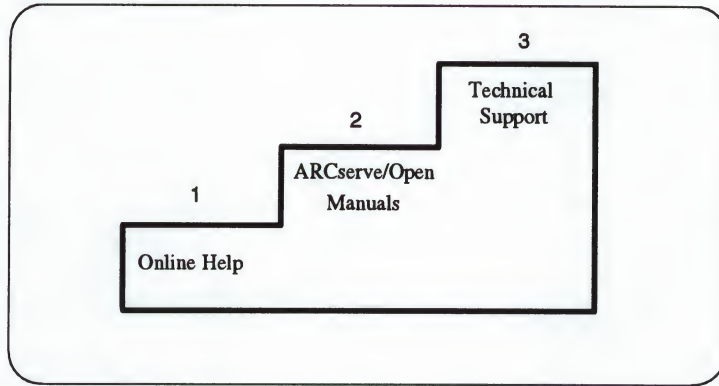


Figure 1-1 Steps For Getting Help

The Online Help System provides an explanation of the field on which the cursor is positioned. To use the Online Help System, press <F1> and an explanation of the current field appears.

The *User Guide* and *Reference Manual* are valuable sources of information and help. The *Reference Manual* contains troubleshooting information in *Appendix A*.

If you still need help after consulting the Online Help and the manuals, you can contact us directly. Technical support is free to all registered ARCserve/Open users and the telephone number is on the front page of this manual. The other option is to fill out the forms found in *Appendix F* of the *Reference Manual* and then FAX them to us. We will call you back with an answer in a timely manner.

2. The Interface - Keys & Screens

Three basic screen formats are used to transfer information to and from the user:

- **Menus**
- **Forms**
- **Lists**

Each of these has a specific purpose and they appear at various points throughout the program. The rules outlined below are general and apply to all menus, lists, and forms. Should exceptions exist, they will be noted where applicable.

ARCserve/Open v1.0

Thur Apr 9 15:22:02 1992

User root on server gallium

Available Topics

- > Administration
- Tape Maintenance
- Schedule Unattended Jobs
- Attended Operations
- File Tracking System & QFA Restore
- UNIX Shell

<F1>:Help <Enter>:Select <Esc>:Exit

Figure 2-1 ARCserve/Open Screen Format

The screen format is depicted in Figure 2-1. At the top of the screen is a header that shows the program name and version, the current date and time, and the user name and system name. At the bottom is a list of keys that can be used with the menu, form, or list that appears in the center of the screen.

2.1 Menus

ARCserve/Open uses a menu-driven operating format. It is therefore important to spend a few moments learning how to move both between and within the various menus. Figure 2-2 shows a typical ARCserve/Open menu.

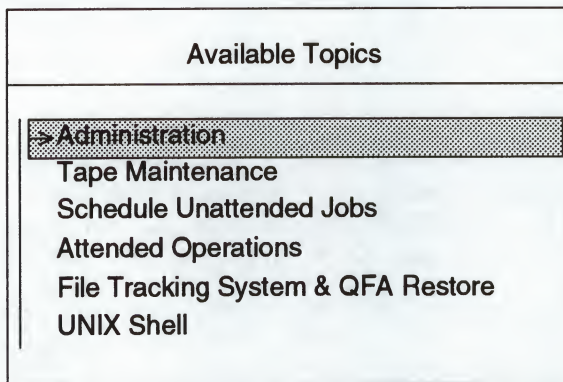


Figure 2-2 Sample ARCserve/Open Menu

To select a menu option, use the cursor control keys **<Arrows>** to highlight the desired selection. Once it is highlighted, press **<Enter>** to make the selection and proceed to the next screen.

2.1.1 Command line options

You can also execute the following ARCserve/Open commands directly at the command prompt:

- **Backup**
- **Restore**
- **Count**
- **Purge**

Execute these commands by typing **ARC** followed by the first letter of the command (B,R,C,P) followed by a script name (See Section 2.4 "Scripts").

ARC B myscript **<Enter>**

2.2 Forms

A third type of screen, a form, is used whenever you are to enter data such as file names, dates, and times.

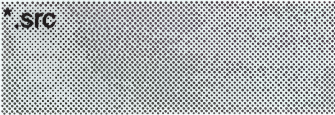
Job Entry Form: Unattended Backup to Tape (Point & Select)		
Tape Name:back1	Mode: APPEND	Session Password: ***
Error Log File: /tmp/reports/rep.1		
EXCLUDE FILES		
		
Follow Symbolic Links: YES		
Back Up Hidden Files: YES	Back Up Special Files: YES	Track Files: YES
Verify Method: None	Delete Source Files: NO	
Use Calendar To Schedule: NO		
Execute Job on 07/30/92 at 12:35		
Automatic Repeat Interval: 0 Months 0 Days 0 Hours 0 Minutes		
Backup Method: Complete: All Files		

Figure 2-3 Sample ARCserve/Open Form

On a form, you are required to select fields and enter the appropriate data within these fields. Wherever possible, default values have been selected for the various fields and appear on the form when it is first displayed.

Whenever a form is encountered, the highlight will be on the first field. Use the cursor control keys to move the highlight in the desired direction from one field to another. Once a text entry field is highlighted, you can begin to enter your data. Use the **<Enter>** key to leave the field and move on to the next field after typing data.

When the form is complete, use the **<F2>** key to leave the form and process the information. Should you decide to quit at any point within the form, use the **<Esc>** key. See Section 2.5 for more information on keys and their uses.

Forms have three different types of fields:

TEXT ENTRY fields are used for entering user specifications.

TOGGLE fields allow you to select one of two choices. Press the first letters of the two choices to select the correct item.

LIST fields provide you with available choices for that field. Use the cursor control keys to highlight an item then press **<Enter>** to select it.

2.3 Lists

A list is quite similar to a menu. It is used to select single or multiple items from a list of available choices.

Files	Date	Time	Size
program1.c	11-19-92	12:02	2900
mystuff.doc	11-19-92	12:03	6040
.profile	11-19-92	12:02	630
mbox	11-19-92	12:03	8819
.rhosts	11-19-92	12:03	56

Figure 2-4 Sample ARCserve/Open List

To select one item, use the cursor control keys to highlight the item and then press **<Enter>**. To select more than one item, use the cursor control keys as above, but then use **<F5>** to mark the item for selection. Continue this process until you have made all of your choices. Press the **<F2>** key to process the choices and proceed with program operation.

2.4 Scripts

You can save some of the more frequently used forms as scripts. You can recall these forms at any time, with the information you entered, by selecting their names from a *Script List*. The following figure shows a typical *Script List*.

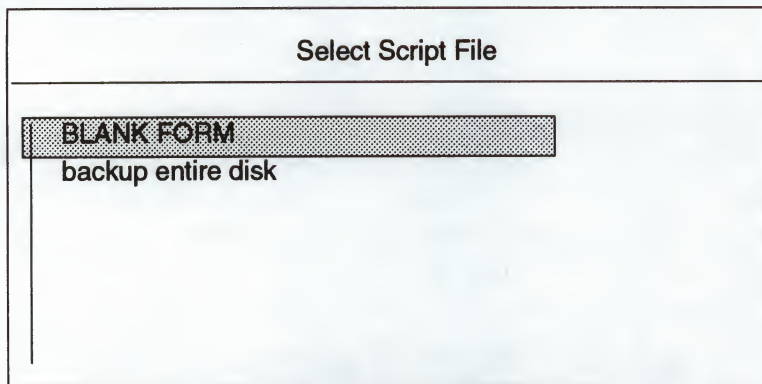


Figure 2-5 Sample Script List

Scripts save you the work of completing the form each time you repeat a job. For example, you may wish to count the number of files in a particular directory on a weekly basis. The *Count Form* has fields for entering a report name, files and directories to include or exclude, whether to count hidden files and whether to count special files. If you know that this information won't change from week to week, you can enter it, then save the form as a script. The next time you run the job, select the script name from the *Count Script List* and the job will be executed.

The *Script List* doesn't appear until after you create your first script. Before creating a script, the form appears where you enter the job information. After you create your first script, the *Select Script File List* will always appear before the job entry form. In addition to your scripts, *BLANK FORM* will appear in the *Select Script File List*. Use *BLANK FORM* to create a new job.

Scripts are specific for each job type. A backup script will only appear when you select *Backup*, and a count script will only appear when you select *Count*.

2.5 Special Keys

ARCserve/Open recognizes some special keys. Some are active in menus and lists, some are active in forms, and some are active in both.

Sometimes you are required to use a combination of the <Alt> key and another key. The <Alt> key combinations are only necessary under special circumstances, such as when you run ARCserve/Open from over a network. Most of the time, you will use the <Arrow>, , <Ins>, <Backspace>, and <Function> keys to do your work.

The keys used with ARCserve/Open are listed below along with their function.

2.5.1 Keys that are active in forms:

<F1>	Invokes the Online Help utility. The Online Help utility provides information for completing fields, what selections mean, etc. With the highlight on the item in question, press <F1> to open the help window. The <PgUp> and <PgDn> keys are functional here, if there is more than one page of help. Press <F1> a second time to display a list of special keys and how they function within ARCserve/Open.
<F2>	Saves and processes the current form or screen. After completing the form, press <F2> to process your data.
<Enter>	Selects a highlighted item, moves to the next field in a form, and confirms your actions.
<Esc>	Returns to the previous screen or exits from the program.
<Arrows>	Moves the cursor up, down, right or left.
<Ins>	Provides a list of choices for a particular field. Pressing this key will cause a list to appear that contains valid entries for the current field.
	Deletes data to the right of the cursor.
<Backspace>	Deletes data to left of the cursor.
<Ctrl> <N>	Moves the cursor to the next field in a form.
<Ctrl> <P>	Moves the cursor to the previous field in a form.

<Ctrl> <L>	Moves the cursor left one field at a time.
<Ctrl> <R>	Moves the cursor right one field at a time.
<Ctrl> <D>	Moves the cursor down one field at a time.
<Ctrl> <V>	Deletes one character to the right of the cursor (same as the key).
<Ctrl> <H>	Deletes one character to the left of the cursor (same as the <Backspace> key).
<Ctrl> <Y>	Deletes all text from the current field (clears the field).
<Ctrl> <X>	Clears the field (same as <Ctrl> <Y>).

2.5.2 Keys that are active in menus and lists:

<F1>	Invokes the Online Help utility. The Online Help utility provides information such as what selections mean, how to make selections, etc. Press <F1> from any screen or menu to open the help window. The <PgUp> and <PgDn> keys are functional here, if there is more than one page of help. Press <F1> a second time to display a list of special keys and how they function within ARCserve/Open.
<F3>	Selects a job or queue so that you can make changes to its information. For example, you can change information about a scheduled job by selecting its name from a queue, pressing <F3> , and making your changes.
<F5>	Marks items for selection. Highlight the desired item and then press <F5> to SELECT it. Press <F5> again to DE-SELECT it.
<F6>	Selects all items in a list.
<F7>	DESELECTS all items that you've selected using <F5> .
<F8>	Refreshes the screen, from anywhere in the program.
<Ctrl> <Q>	This is an alternative to the <Esc> key. It displays the <i>Available Topics Menu</i> from a submenu, or exits the program from the <i>Available Topics Menu</i> .
<Ctrl> <J>	Moves the cursor down one menu item at a time.

<Ctrl> <K>	Moves the cursor up one menu item at a time.
<Ctrl> <D>	Scrolls a large list of items (for example, in a database list) down one line. The uppermost item in the list scrolls off the top of the screen.
<Ctrl> <F>	Scrolls a large list of items (for example, in a database list) forward one screen.
<Ctrl> 	Scrolls a large list of items (for example, in a database list) back one screen.
<Arrows>	Moves the cursor up and down through the menu options or list of items.
<Ins>	Displays a list of choices for a particular field. Also displays the <i>Unattended Operations Menu</i> from the <i>Unattended Job Status List</i> (Chapter 6).
	Deletes items from a list. Highlight the desired item and then press to delete it.
<Home>	Moves the cursor to the first menu or list item.
<End>	Moves the cursor to the last menu or list item.
<PgUp>	Moves the cursor up one page in a pick list or menu.
<PgDn>	Moves the cursor down one page in a list or menu.

NOTE: On some machines only the Arrows on the numeric keypad are functional. Please ensure that **<NumLock>** is off.



To begin using ARCserve/Open, after you've installed it and started the backend, (see Chapter 2 of the *Reference Manual*) log in to the system on which ARCserve/Open is loaded and enter the following command:

<Enter>

The *Available Topics Menu* appears on the screen (see Figure 3-1).

Available Topics	
	Administration
	Tape Maintenance
	Schedule Unattended Jobs
	Attended Operations
	File Tracking System & QFA Restore
	UNIX Shell

Figure 3-1 Available Topics Menu

There are six options on this menu. The functions of each are summarized below.

- **ADMINISTRATION** includes setting up and maintaining queues, examining the *Activity Log*, and examining the *Tape Usage Log*.
- **TAPE MAINTENANCE** allows you to format, check the status of, test, retention and erase tapes and reset a tape drive. It also allows you to select a drive (if you have more than one drive connected to your system).
- **SCHEDULE UNATTENDED JOBS** allows you to schedule and manage unattended backup and restore jobs. These jobs are executed in the background.

- **ATTENDED OPERATIONS** allows you to back up and restore data, count files/directories, purge files/directories, and scan tapes for session information.
- **FILE TRACKING SYSTEM & QFA RESTORE** allows you to quickly search for files and directories that have been backed up, restore complete sessions, generate reports of past operations, merge tape information from other systems, and purge old tape records. In addition, you can selectively restore files and directories using the *Quick File Access* (QFA) feature.
- **UNIX SHELL** allows you to temporarily leave ARCserve/Open and execute UNIX commands.

These topics are discussed in the following chapters and are arranged in the order of the program, i.e., in a top down fashion similar to the menu/screen hierarchy.

4. Administration

The *root* user can select the *Administration* option to manage job queues, view the *Activity Log*, and view the *Tape Usage Log*. Users other than *root* can select the *Administration* option to view job queue information, the *Activity Log* and the *Tape Usage Log*. When this option is selected from the *Available Topics Menu*, the *Administration Menu* is displayed.

Administration
Queue Management
View Activity Log
Tape Usage

Figure 4-1 Administration Menu

4.1 Queue Management

Queues are required to submit unattended jobs. The *root* user can create new queues and assign users and operators to them using this option. See the *Reference Manual* for more detailed information about queues.

When *Queue Management* is selected, a list of queues is displayed (Figure 4-2).

Priority	Status	Queue
1	READY	chey_a_q
2	HOLD	New Queue

Figure 4-2 Queue Picklist

The program is installed with a priority 1 queue, "chey_a_q". This is the only queue that appears the first time the list is displayed. As you create more queues, they will appear in this list in order of their priority (1 being the highest priority and 8 being the lowest priority). See the *Reference Manual* for more information about queue priority.

4.1.1 Create Queue

Press the <Ins> key to create additional queues. A *Create Queue Entry Form* will appear (see Figure 4-3). Enter the name and priority of the new queue and then press <F2> to save it.

Create Queue
Queue Name: Engineering
Queue Priority: 4

Figure 4-3 Create queue form

4.1.2 Authorizing Users and Operators

Users must be authorized to use a queue before they can schedule a job. After *root* creates a queue, he/she must authorize users as either Queue Users or Queue Operators. Queue Users can submit, delete, modify, reschedule, and change the status of their own jobs. Queue Operators, having more authority, may delete, modify, reschedule, and change the status/position of **any** job in the queue.

NOTE: Queue Operators also need to be listed as Queue Users to submit jobs to the queue.

Select the queue for which you will authorize users and operators by highlighting it and pressing <Enter>. The *Authorization Menu* is then displayed. The *Authorization Menu* has two options, *Users* and *Operators*, as shown in Figure 4-4.

Authorization Menu	
	Users
	Operators

Figure 4-4 Authorization Menu

This menu allows you to assign Queue Users and/or Operators to the selected queue.

Select either *Users* or *Operators* from the menu and a list of the authorized Users/Operators for the respective category appears (see Figure 4-5). The *root* user is automatically listed as both a user and an operator. This will be the only entry on each list when it is first viewed.

Queue Users	
	root

Figure 4-5 Queue Users List

To add Users/Operators, press <Ins>. A list of users who have accounts on the system will appear (see Figure 4-6). Use the <F5> key to select name[s] from this list. Press <F2> after selecting names to add these users to the list of authorized users.

Select Users	
	root
	john
	elmer

Figure 4-6 Available Personnel Picklist

Once the Queue Users/Operators have been assigned to each queue, they can begin to set up jobs and submit them to queues. Return to the *Available Topics Menu* using the <Esc> key.

4.1.3 Removing Users and Operators

To remove a user or operator, delete their names from the *Users* or *Operators* list (see Figure 4-5). To delete a name, highlight it, then press .

4.1.4 Delete Queue

To delete a queue from the queue list (Figure 4-5), highlight the queue name and then press . You are asked if you are sure that you want to delete this queue. Choose "YES" to continue deleting, choose "NO" to cancel the deletion.

4.1.5 Modify Queue

To modify a queue name, priority, or status, select the queue from the list (Figure 4-2) and then press <F3>. The *Modify Queue Form* will appear (see Figure 4-7). Make the desired changes and then press <F2>.

Modify Queue
Queue Name: SALES
Queue Priority: 2
Queue Status: Ready

Figure 4-7 Modify Queue Form

When you first create a queue, it has a ready status. You can change this status to "Hold" through the *Modify Queue* form by highlighting "Ready" and then pressing any key. When a queue is on hold, you can submit jobs to it, but they will not be executed until the status is changed to "Ready". This is useful if you need to perform maintenance, such as changing a tape drive, and you don't want jobs becoming "Active" and failing because the tape drive isn't present.

4.2 View Activity Log

Select *View Activity Log* from the *Administration Menu* to examine ARCserve/Open's activity on the system. This option can be selected by any user. A log similar to the one in the following figure will be displayed.

Activity Log Information	
[08/10/92 11:30]	:Update Tape usage log database
[08/10/92 11:30]	:Starting Server
[08/10/92 11:41]	:Start attended Backup Operation By root
[08/10/92 11:41]	:Source Directory: /usr/dimi
[08/10/92 11:42]	:Backup Session 2 To Tape MON Seq# 1
[08/10/92 11:43]	:967 K Bytes 3 Directories 34 Files Backed up
[08/10/92 11:43]	:Average Throughput = 5220 KB per Minute
[08/10/92 11:43]	:ME:0 UDE:0 SWE:0 SRE:0
[08/10/92 11:43]	:Operation Completed
[08/14/92 12:43]	:Start Unattended Backup Operation
[08/14/92 12:43]	:Queue: CHEY_A_Q, Client = dimi
[08/14/92 12:43]	:Source Directory: /usr/dimi
[08/14/92 12:45]	:TAPE DRIVE: Cartridge is write protected
[08/14/92 12:45]	:Operation Not Completed

Figure 4-8 Activity Log

This log details the attended and unattended operations performed by ARCserve/Open. It gives you information such as: the time and date, activity performed, the source directory used, average throughput of the data, as well as whether the operation was completed or if an error occurred.

If the *Activity Log File* is very large, only part of it will be displayed on the screen. Use the up and down **<Arrow>** keys to move through the log one line at a time. Use **<PgDn>** to display the next screen or **<PgUp>** to display the previous screen.

After viewing the log, press <Esc> to exit. The *Delete Log File Screen* appears (if you are a root user).

Delete Log File ?	
	NO
	YES

Figure 4-9 Delete Log File Screen

If you would like to delete the log file (as it can get very large) you can do so by choosing "YES".

NOTE: You can use ARCserve/Open to make a backup of the *Activity Log File* before deleting it. The file is called /usr/lib/arcserve/data/LOG/logfile.log

4.3 Tape Usage

The *Tape Usage Log* helps you keep track of your backup tapes. This log contains information about past formatting, when the tape was first used, and the number of errors that have occurred during use. The media type, which is not always available on the tape label, is also given.

When *Tape Usage Log* is selected from the *Administration Menu*, the *Tape Log Selection List* shown in the following figure will appear.

Tape Name	Seq #	Tape ID	First Format Date	Usage Time (Hrs)
TEMP	1	B499	09/26/91 19:00	00.95
MY-WS	1	560B	09/27/91 10:35	11.27
MY-WS	2	560B	11/29/91 17:08	03.40

Figure 4-10 Tape Log Selection List

- NOTES:**
1. When you reformat a tape using the same name, a new record is created for that tape. You should delete the old record from the *Tape Log Selection List*, as the files it referred to no longer exist on the tape.
 2. If you Erase or Test an ARCserve/Open tape, the contents of that tape will be destroyed. You should then delete the record of that tape from the *Tape Log Selection List* shown in Figure 4-10.

The *Tape Database* (see Figure 4-10) fields are explained below.

TAPE NAME: This is the current name of the tape which was given the last time it was formatted.

SEQ #: This is the sequence number of the tape. The first tape used in a backup is labelled #1. If more than one tape is used, the subsequent tapes are given the same name as the first tape and the sequence number is incremented by one. This allows you to determine the order of the tapes when restoring data.

TAPE ID #: The Tape ID number is a random Hexidecimal number assigned to the tape at the time it is formatted. Tapes that have the same name will not have the same ID number (thus making each tape unique). Tapes in a set will have the same ID number, but a different sequence number.

FIRST FORMAT DATE: The first time a tape is formatted by ARCserve/Open, the date is recorded. This date gives an indication of how long the tape has been in service.

USAGE TIME: This is the number of hours that the tape has been used.

To obtain more detailed information about a tape, highlight it and press <Enter>.

Tape Name :	TEMP	
Sequence # :	1	
Tape ID # :	B499	
Media Type :	Default	
First Format Date :	09/26/91 10:27	
Last Format Date :	09/26/91 10:27	# Times Formatted: 1
Last Access Date:	04/23/92	Last Operation: READ
Previous Tape Name :		
Expiration Date :	09/26/92	
Usage Time:	256.1 Hours	
Backup Passes :	78	
Restore Passes :	3	
Media Errors :	0	Unrecoverable Data Errors:0
Soft Write Errors:	0	Soft Read Errors :2

Figure 4-11 Tape Usage

The *Tape Usage Report* fields are explained below.

TAPE NAME: Please see the *Tape Database Fields*. If the tape has been erased, tested, or reformatted, "DESTROYED!!!" will appear next to the tape name. This means that the actual files have been removed from the tape.

SEQUENCE #: Please see the *Tape Database Fields*.

TAPE ID #: Please see the *Tape Database Fields*.

MEDIA TYPE: This field displays the type of cartridge detected in the tape drive.

FIRST FORMAT DATE: The first time a tape is formatted by ARCserve/Open, the date is recorded. This date gives an indication of how long the tape has been in service.

LAST FORMAT DATE: This is the date that the tape was last formatted. It is the date that the current name and ID # were given to the tape.

TIMES FORMATTED: This is the number of times the tape was formatted using ARCserve/Open's formatting standards.

LAST ACCESS DATE: This date is the last time that the tape was used.

LAST OPERATION: This operation can be either read, write, or erase. It indicates the last action that was performed on the tape.

PREVIOUS TAPE NAME: This name was the name of the tape prior to formatting the tape with the current name.

EXPIRATION DATE: You can give the tape an expiration date when it is formatted using the *Format* command on the *Tape Maintenance Menu*. ARCserve/Open uses a default expiration date of 365 days from the current date unless there is an existing expiration date. If there is an existing date, it is maintained. When the tape expires, it can still be used, but you will be notified that you are using an expired tape.

USAGE TIME (HOURS): This is the number of hours that the tape has been in use in a tape drive.

BACKUP PASSES: This is the number of times that the tape was used for backup sessions.

RESTORE PASSES: This is the number of times that the tape was used for restore.

MEDIA ERRORS: This is the total number of errors caused by a tape malfunction indicating the tape has a flaw. Sometimes it may be corrected by erasing and reformatting the tape. A tape drive with dirty heads, or heads that need reconditioning can also report a media error.

UNRECOVERABLE DATA ERRORS: This is the total number of errors that are caused by the tape drive not being able to read from, or write to, the tape. This may not always be a tape problem, but may be caused by the drive or its host adapter.

SOFT WRITE ERRORS: This error count is the total number of correctable write errors that have occurred during backup sessions.

SOFT READ ERRORS: This error count is the total number of correctable read errors that have occurred during restore sessions.

5. Tape Maintenance

Choose *Tape Maintenance* from the *Available Topics Menu* to format, check the status of, test, retension, erase, or reset information about all connected drives. You can also use this menu to select a tape drive if you have more than one attached to your system.

WARNING: You risk corrupting your ARCserve/Open tapes and losing valuable data by using UNIX commands (such as tar and cpio) with them

After you select the *Tape Maintenance* option, the *Tape Maintenance Menu* appears.

Tape Maintenance	
	Format
	Status
	Test
	Retension
	Erase
	Reset
	Select

Figure 5-1 Tape Maintenance Menu

5.1 Format

Use this option to format tapes for use with ARCserve/Open. There are two pieces of information you need to provide when formatting a tape: a tape name and a date on which the tape expires.

After you select *Format* from the *Tape Maintenance Menu*, the *Format Tape Form* appears.

Format Tape Form	
Tape Name:	
Expires After: 365	Days

Figure 5-2 Format Tape Form

The *Format Tape Form* fields are described below.

Tape Name: Enter a name for the tape. You will use this name in the future, when you perform a backup, when you restore files, or to specify a session report.

Expires After: This is the date on which the tape expires. You can still use the tape after the expiration date passes, but ARCserve/Open will display a message indicating that the tape is expired. The default expiration date is 365 days from the day you format the tape.

Press <F2> after completing the form, then confirm that you want to proceed with the format.

5.2 Status

The *Status* option shows you information about tapes such as the tape's name, date on which it was created, and the date on which it expires.

To check the status of a tape, put the tape in the tape drive and select *Status* from the *Tape Maintenance Menu*. A report similar to the following is displayed.

Drive Type: TANDBERG TDC 3600		SCSI ID: 3	
Tape Name:	tape4		
Sequence #:	1		
Tape ID#:	75DC		
Media Type:	Default		
First Format Date:	4/22/92 10:19		
Last Format Date:	4/22/92 10:19		# Times Formatted: 1
Last Access Date:	4/22/92 10:19		Last Operation: READ
Previous Tape Name:			
Expiration Date:	4/22/93 10:19		
Usage Time:	0.0		
Backup Passes:	0		
Restore Passes:	0		
Media Errors:	0	Unrecoverable Data Errors:	0
Soft Write Errors:	0	Soft Read Errors:	0

Figure 5-3 Tape Status Report

If you have more than one tape drive attached to your system, the *Tape Status Menu* will appear.

Tape Status	
All Connected Drives	
Current Drive	

Figure 5-4 Tape Status Menu

The *All Connected Drives* option will display a list of all the drives connected to your system (Figure 5-5).

Tape Name & Sequence	ID	Created On		Format	Status
tape1	3	05/25/92	09:54	fast	Ready
NON CHEYENNE TAPE	4	**/**/**	***	****	Ready

Figure 5-5 List Of All Connected Drives

Use the up and down **<Arrows>** to select a tape for which you would like to display the status. Tapes that have not been formatted by ARCserve/Open will have the name "NON CHEYENNE TAPE". A report similar to the one in Figure 5-4 will be displayed after you select a tape.

If you select the *Current Drive* option, the report in 5-4 will be displayed for the tape drive that is currently selected.

NOTE: Use the *Select* option on the *Tape Maintenance Menu* to "select" a drive as the default drive.

NOTE: After you connect a new tape drive to your system, it won't appear on this list until after you run *Reset* from the *Tape Maintenance Menu* or restart the server.

5.3 Test

WARNING: This option destroys all data on the tape.

Use this option to verify that your system can write data to, and read data from a tape. You may want to run this option on new tapes, before putting them into service, to make sure they are usable.

To test a tape, put the tape in the tape drive and select *Test* from the *Tape Maintenance Menu*. You are asked to confirm the test.

All Data On The Tape Will Be Lost. Continue?
YES
NO

Figure 5-6 Test Query

If you don't want to test the tape, choose "NO". If you want to proceed with the test, choose "YES"

ARCserve/Open tests the tape. If the tape passes the test, ARCserve/Open displays the following message:

"Tested the tape successfully"
"Press any key to continue"

If the test fails, ARCserve/Open displays a message telling you why the test failed and what you should try to correct the problem. For example, if a tape is write protected and you try to test it, the following message will appear:

"Cartridge is write protected"
"-- Press <Esc> to continue --"

5.4 Retension

NOTE: This option only applies to Quarter Inch Cartridge (QIC) tapes. It does not apply to 8mm or 4mm Digital Audio Tapes (DAT).

Computer tapes are similar to audio tapes in that the more you use them, rewinding and fast forwarding, the more the tape becomes uneven and loose on the spools. When a tape becomes uneven on the spools, it is prone to errors, may jam, or worse yet, break.

Use *Retension* to wind a tape so that it is even on its spools and has the correct tension. It might be useful to retension a tape if you are having trouble writing to it or reading from it.

To retension a tape, put a tape in the tape drive and select *Retension* from the *Tape Maintenance Menu*. After the tape has been retensioned, the following message appears on the screen:

"Retensioned the tape successfully"
"Please press any key to continue"

5.5 Erase

Use this option to erase all data from a backup tape. ARCserve/Open also erases all references (if any) to this tape from the *FTS Database*.

WARNING: Use this option with caution. Once you erase a tape, the data it contained is gone permanently.

NOTE: Erasing a tape completely can take a long time. Depending on the size of the tape, this operation can take from 15 minutes to an hour or more.

To erase a tape, put it in the tape drive and select *Erase* from the *Tape Maintenance Menu*.

You are asked to confirm the erase.

This Will Take A While. Continue?
YES
NO

Figure 5-7 Confirm the erase

If you are sure that you want to erase the tape, choose "YES" to confirm.

5.6 Reset

The *Reset* option re-initializes communications between your computer and your tape drive. You should select *Reset*, for example, whenever you remove a drive from, or add one to your system. *Reset* causes ARCserve/Open to refresh all of its tape drive information.

To start a reset, select *Reset* from the *Tape Maintenance Menu*.

ARCserve/Open resets the tape drive information and displays the following message:

"Reset the tape drive successfully"
"Press any key to continue."

5.7 Selecting A Tape Drive

Use this option to select a tape drive (if you have more than one connected to your system) and to get information about the tape drives connected to your system.

After choosing *Select* from the *Tape Maintenance Menu*, a screen similar to the following screen is displayed:

Interface	ID	Drive Type		
SCSI-1	2	GIGATAPE	GIGA1235	1405
SCSI-1	3	WangDAT	Model 1300	02.2
SCSI-1	4	TANDBERG	TDC 3600	-07:

Figure 5-8 Select A Tape Drive

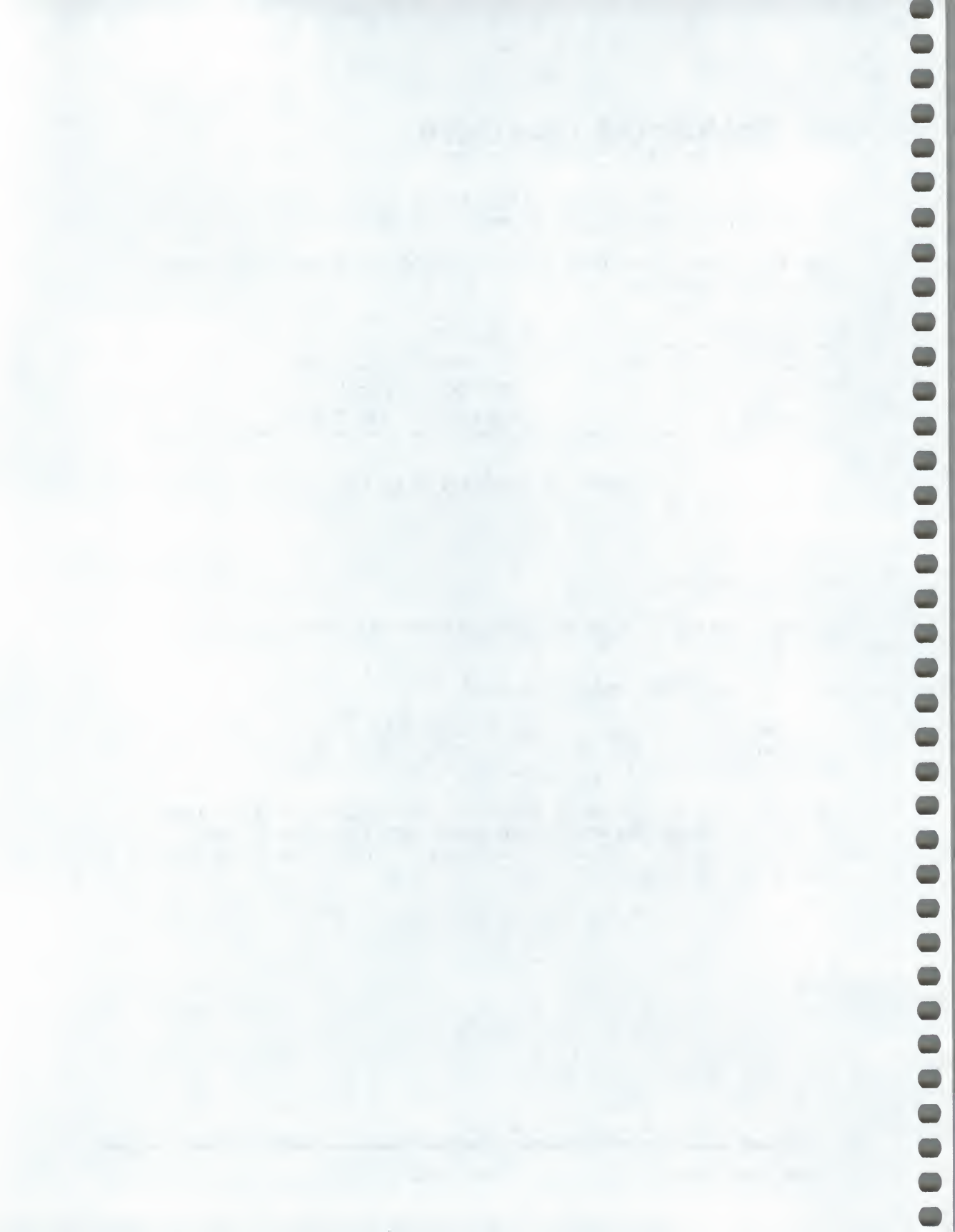
The fields are explained below:

Interface: This is the host adaptor, or interface card, to which this tape drive is connected.

ID: This is the SCSI ID number of the tape drive.

Drive Type: This information includes the model name, model number, and firmware revision number of the tape drive. All of this information, when combined, uniquely identifies any tape drive attached to your system.

Use the up and down **<Arrows>** to highlight a drive then press **<Enter>** to select it. Until you select another drive, all tape maintenance operations will be performed on this drive. If you don't select a drive, the default will be the one with the lowest SCSI ID number.



6. Schedule Unattended Jobs

Choose *Schedule Unattended Jobs* from the *Available Topics Menu* to create and manage unattended backup and restore jobs. Unattended jobs are just that, jobs that need no personnel in attendance. These jobs are set up and scheduled in a queue for which you are authorized. When the execution time that you specified is reached, the jobs are performed by the ARCserve/Open program in the background.

The basic steps for scheduling an unattended job are as follows:

- Select a queue into which you will submit the job
- Choose *Backup* or *Restore*
- Choose the *Speed Entry* or *Point & Select* method of specifying files
- Complete the Job Entry Form
- Save or submit the Job Entry Form

Instructions for performing the above tasks follow in the next few sections.

6.1 Select a queue

When the *Schedule Unattended Jobs* option is selected from the *Available Topics Menu*, a list of the available queues (see Figure 6-1) is displayed. Please see Chapter 4, *Administration* for more information about queues.

Priority	Status	Queue
1	READY	chey_a_q

Figure 6-1 Queue List For Scheduling Jobs

Select a queue for which you will submit, delete, modify, or reposition jobs. You must be an authorized Queue User in order to submit and modify jobs in this queue.

Once a queue is selected, a list of jobs that are scheduled for that queue appears (see Figure 6-2). If there are no jobs in the queue, only the header will appear. The queue is updated periodically (as jobs are processed, completed, removed, or scheduled by other users) so the list stays current.

Owner	Execution Time		Job Type	Source	Status
root	04/27/92	14:00	BACKUP	/tmp	READY
ravi	04/27/92	15:32	BACKUP	/home/ravi	HOLD

Figure 6-2 Scheduled Jobs List

You can modify job information, reschedule a job, or delete a job by selecting it from this list. See *Job Administration* (Section 6.4) at the end of this chapter for more information about these operations.

To schedule a new job, press <Ins>. The *Unattended Operations Menu* appears (see Figure 6-3).

Unattended Operations	
	Backup
	Restore

Figure 6-3 Unattended Operations Menu

6.2 Backup

Unattended Backup is used to copy files from your hard disk (or file system mounted on your hard disk) to a tape drive attached to your system. When *Backup* is chosen from the *Unattended Operations Menu* (see Figure 6-3), the *Selection Method Menu* shown in Figure 6-4 appears.

Selection Method	
	SPEED ENTRY
	POINT & SELECT

Figure 6-4 Selection Method Menu

There are two methods for scheduling unattended jobs: *Speed Entry* and *Point & Select*.

The *Speed Entry* method is solely form-based, you enter all the backup information (source files, tape name, time to execute the jobs, etc) into the form.

The *Point & Select* method is graphically oriented. It allows you to pick source directories from a list of available directories. You may also choose individual files from a list of files contained in the directories. After selecting files and directories, you then complete a form similar to the one used with the *Speed Entry Method*.

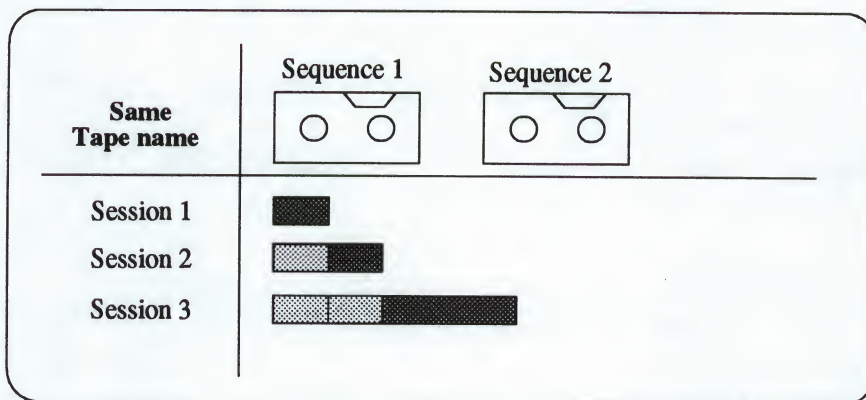
6.2.1 General Backup information

Before executing a backup job, you should place a tape in the tape drive. This tape can either be formatted prior to using it (see the *Tape Maintenance Section* of this Guide for formatting information) or it can be formatted when the job is executed. If an unformatted tape is used, you can enter the tape name on the *Backup Job Entry Forms* (see Figures 6-5 and 6-17).

When backing up to tape, each backup session that is performed (one job) is given a session number. The session number is incremented by one for each subsequent session. The first session on a tape is session number one, the second is session number two, and so on.

It is possible for a backup to require more than one tape. In this case, the first tape will have a sequence # 1. The sequence number, like the session number, will be incremented by one for subsequent tapes in the sequence.

For example, you might have a tape with 2 sessions on it. The 3rd session, however, starts but runs out of space on the tape. The program will prompt you to insert another tape into the tape drive. This new tape will have the same name as the previous tape, start where session 3 left off, and be assigned a sequence number of 2.



 Old session  current session

Figure 6-5 A Sequence Of Tapes

If you specify a particular tape name in your backup form and choose the Append mode, ARCserve/Open will notify you if the wrong tape is in the tape drive. If there is no tape in the drive, the program will also notify you of this.

You can use the *Status* command on the *Tape Maintenance Menu* to check the name of the tape in the drive and to check whether the tape is formatted according to Cheyenne's standards. You cannot use a tape formatted by another program. ARCserve/Open will automatically reformat it.

6.2.2 Speed Entry Backup

The first time you select *Speed Entry* from the *Selection Method Menu*, the following form appears (Figure 6-6).

Job Entry Form: Unattended Back Up to Tape		
Source Directory: /tmp		
Tape Name: TAPE1	Mode: APPEND	Session Password:***
Error Log File: /tmp/files/report1		
EXCLUDE FILES	INCLUDE DIRECTORIES	
*.RLS		
Follow Symbolic Links: NO		
Back Up Hidden Files: YES Back Up Special Files: YES Track Files: YES		
Verify Method: NONE		Delete Source Files: NO
Use Calendar To Schedule: NO		
Execute Job on 03/30/92 at 12:35		
Automatic Repeat Interval: 0 Months 0 Days 0 Hours 0 Minutes		
Backup Method: Complete: All Files		
Create Script: NO		

Figure 6-6 Unattended Back Up Speed Entry Form

If you have previously scheduled jobs, and created scripts for the jobs, the *Script List* appears first.

Select Script File
BLANK FORM
My Script

Figure 6-7 Speed Entry Script List

Select the script you want or press <Enter> to select the *BLANK FORM*.

The *Unattended Backup Speed Entry Form* fields are described on the next few pages. The first two fields, *Source Directory* and *Tape Name*, are mandatory. You must complete these two fields in order to save the form and submit the job.

SOURCE DIRECTORY: Enter the source directory path. All files and subdirectories within the source directory path will be copied to the tape. **No local directory paths are allowed (such as ./etc).** Conventional UNIX path specifications are acceptable. You can back up an entire disk by typing "/" for the *root* directory.

To assist you in completing the path, press the <Ins> key when you are within this field. A list of directories is displayed. Highlight a directory name and then press <Enter> to select it. Another list appears, this time with subdirectories under the "/" (*root*) level directory you selected. You can continue selecting subdirectories, or press <Esc> to use the path you've already selected.

NOTE: You must have access rights to the files/directories in order to perform the backup.

TAPE NAME: This is the name given to the tape when it was formatted. If it is unformatted, then it will be formatted when the job begins and the name given in this field will be placed in the tape's header. Spaces and periods in the tape name are converted to underlines (_).

If you want to use any tape that is in the drive, enter an asterisk (*) in this field. If an asterisk is used with an unformatted tape, a default tape name, "TAPE", is used.

MODE: This is a toggle field. The default, "Append", will put a new session on the tape following the last session.

If "Overwrite" is selected, the contents of the tape will be destroyed and replaced with the new backup. The name entered in the **TAPE NAME** field must be the same as the name on the tape. If the tape names do not match, the job will not proceed and you will be asked to enter the correct name. This is a safety precaution, as the tape in the drive may not be the correct one to overwrite. Using an asterisk (*) and selecting "Overwrite" is not allowed.

NOTE: Use the *Format* feature on the *Tape Maintenance Menu* to format and rename a tape.

SESSION PASSWORD: A password may be entered for each backup job. If a password is used, then it must be entered to restore that session. If the password is unknown, the *root* user can restore the session without it. Passwords are encrypted, so they appear on the screen as asterisks (*).

ERROR LOG FILE: Enter a path and file name where any errors that occur during the job session can be logged. You can look at or print this file using standard UNIX commands. An example of an error is trying to back up a file that is open

or otherwise in use. The program will try repeatedly, eventually time out, and notify you in the *Error Log File*.

INCLUDE/EXCLUDE FILES: This is a toggle field. Select either "Include" or "Exclude". If "Include" is selected, the files listed will be backed up. If "Exclude" is selected, the listed files will not be backed up. If the field is left blank, all files are included. When listing files, wild cards are accepted (e.g., *se, ARC??, etc.). Do not enter path specifications with the files, or use the backslash (/) character.

INCLUDE/EXCLUDE DIRECTORIES: This is a toggle field. Select either "Include" or "Exclude", then list the directories in the field below. If "Include" is selected, only first level subdirectories can be specified; files/directories under them will be copied. If "Exclude" is selected, any subdirectory may be specified. If the field is left blank, all directories are included.

FOLLOW SYMBOLIC LINKS: This is a toggle field. Choose "YES" or "NO". The default is "NO" (all links are backed up). If "YES" is selected, only the file that the link points to will be included in the backup.

BACK UP HIDDEN FILES: This is a toggle field. Choose "YES" or "NO". The default is "YES". If "NO" is selected, hidden files will be not be backed up. Hidden files are files that start with a period (.), such as *.profile*.

BACK UP SPECIAL FILES: This is a toggle field. Choose "YES" or "NO". The default is "YES". If "NO" is selected, special files will not be backed up. There are three types of special files: character, block, and FIFO. An example of a character special file is terminal screen file, such as */dev/tty0*. An example of a block special file is the floppy drive file, */dev/fd0*. Most of the files under */dev* are special files. A FIFO special file is created by one process as a "pipe" to another process.

TRACK FILES: This is a toggle field. Choose "YES" or "NO". If "YES" is selected, then a record of all the directories and files copied will be placed in the *File Tracking System (FTS) Database*. If "NO" is selected, there will be no record of this job in the database.

VERIFY METHOD: Press <Ins> to display a list of methods from which to choose. We strongly recommend that you verify your backup using one of the methods listed below:

Scan Tape Contents - Reads the tape and checks the data format on the tape. This is a general check to see that something was written to the tape.

Compare Tape to Disk - Physically compares all the files backed up to the tape, byte by byte, against the source disk files.

DELETE SOURCE FILES: This is a toggle field; choose "YES" or "NO". If you select "YES", all of the files that are copied from the source to the destination will be deleted from the source directory. Files will be deleted only if the job is completed successfully.

USE CALENDAR TO SCHEDULE: This is a toggle field. Choose "NO" to schedule the backup to occur at regular intervals (e.g. monthly, daily, hourly, or by the minute). Choose "YES" to schedule your own custom backup intervals (e.g. every other month, the 3rd, 14th, and 23rd of every other month, etc.).

If you choose "YES" and press <Enter> a calendar appears. You can use this calendar to select the year, month, day, and time on which the backup will repeat.

Use the Up and Down <Arrows> to change the year and the Right and Left <Arrows> to change the month. Press <Enter> after you have selected the month and year to start selecting days from the calendar.

Apr 15 1992						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

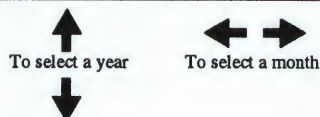


Figure 6-8 Select Year And Month

The cursor will be on the current date. If you have already scheduled days for this month, they will also be highlighted.

Apr 15 1992						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		



To select days

Figure 6-9 Select Days From The Calendar

Use the <Arrow> keys to select a day then press <Enter>. A list of times appears. Use the <Arrow> keys again to move through the list of times. Select hours by marking them with the <F5> key.

Apr		Select time	1992
Sun	Mon	0:00	Sat
		0:30	
		1:00	4
		1:30	
		2:00	11
5	6	2:30	
		3:00	
12	13	3:30	18
		4:00	
19	20	4:30	25
		5:00	
26	27	5:30	
		6:00	
		6:30	
		7:00	



To select a time

Figure 6-10 Times List

When you are finished selecting times at which this backup will occur, press <F2> and return to the calendar. You can schedule more days for this month, or press <F2> again and select another month or year. If you are finished using the calendar, press <F2> to save the settings and return to the *Job Entry Form*.

The following two fields only appear if you chose "NO" for the "Use calendar to schedule" field.

EXECUTE JOB ON: Enter the date and time that the job is to be executed. Use the format MM/DD/YY for the date.

Where:	MM	=	month (1-12)
	DD	=	day (1-31)
	YY	=	last two digits of the year (00-99)

Use HH:MM XX for the time format.

Where:	HH	=	hour (00-12)
	MM	=	minute (00-59)
	XX	=	AM/PM

The default values are the present date and time.

AUTOMATIC REPEAT INTERVAL: If the job is to be repeated automatically without any changes, then the time interval between these sessions should be entered. The job will be rescheduled automatically in the same queue with the new date/time, upon job completion.

NOTE: If the job takes longer than the time interval you've allotted between jobs, the job will not repeat as specified.

For example, you might set the job to repeat every hour, but the job takes one and a half hours to complete. If you start at 1:00, the backup will occur between: 1:00-2:30. The job is then rescheduled to start at 3:30, an hour from when the job ended. Between 3:30 and 5:00 the job is repeated, then rescheduled for 6:00, etc.

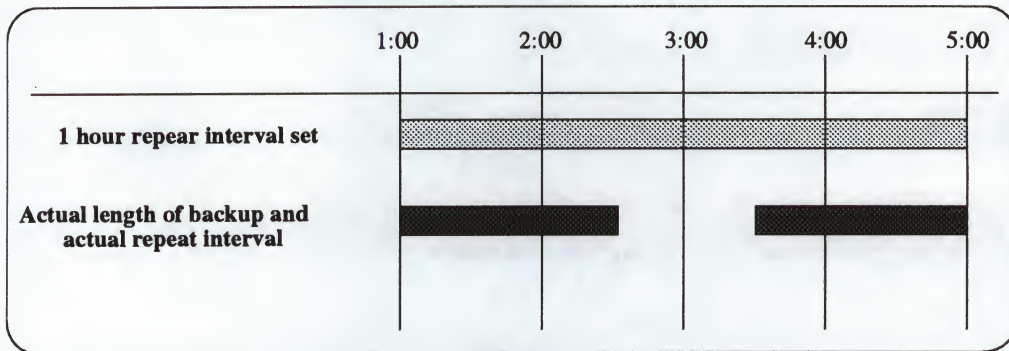


Figure 6-11 Actual Backup Time Exceeds Repeat Interval

BACKUP METHOD: Press <Ins> to display a list of methods from which to choose. Select a method from those listed below:

Complete: All Files - All files in the source directory tree will be backed up regardless of time and date.

Incremental: File Access Date - A threshold date must be entered for this method. Files that have not been accessed since this date will be backed up. This feature can be used to back up files that haven't been touched in a long time, therefore allowing you to free up disk space.

Incremental: Time Stamp - A threshold date and time must be specified. ARCserve/Open then compares all files in the source directory tree with this threshold. Files with date/time stamps later than this threshold are copied.

Create Script: This is a toggle field; choose "YES" or "NO". The default is "NO". If you select "YES", you are asked to enter a script name.

The advantage of creating a script is that you save time the next time you schedule this job. Rather than entering the information over each time you run the job, you select the script name from a list and schedule it. Once created, the script contains all of the information needed to schedule the job.

Script Name: Enter a name for the script. The name can be up to forty characters long.

When you are finished entering data into this form, press <F2> to save the form and submit it to the job queue for processing.

You are asked to confirm whether the job is to be entered in the queue. Select "YES" to schedule the job or "NO" to go back into the form and make changes. If you want to abandon the form, press <Esc> at any point and choose "YES" to discard the form.

After the job is scheduled, you are returned to the *Scheduled Jobs List* (see Figure 6-12). The backup request appears in the queue and is executed by ARCserve/Open at the specified time. (See the *Reference Manual* for information about queue scanning, priority, and job execution.)

Owner	Execution Time		Job Type	Source	Status
root	04/27/92	14:00	BACKUP	/tmp	READY
ravi	04/27/92	15:32	BACKUP	/home/ravi	HOLD

Figure 6-12 Scheduled Jobs List

6.2.3 Point & Select Backup

The *Point & Select Method* allows you to pick specific directories from a graphic tree display of the entire disk. You may also choose individual files contained in the directories.

When you choose *Point & Select* from the *Selection Method Menu*, the *Enter Source Directory Screen* appears (See Figure 6-13).

Enter Source Directory
Source Directory: /home

Figure 6-13 Source Directory Selection

You have three choices at this point:

- Enter a path and press **<F2>** ,
- Press **<Ins>** and select directories from a list of all root (/) level directories on your system
- Enter a partial path then press **<Ins>** to select directories of files.

Any one of these methods ultimately get you to a graphical representation of the source directory.

If you know the directory you want to back up, enter its path. You can also enter a partial path, such as /home in the above example. After entering the partial path, press <Ins>. A list of sub-directories under /home is displayed (press <Ins> without entering a path to display a list of all sub-directories under the root (/)

Select Directory Under /home	
	ravi
	root
	peter
	guest

6-14 Directory Picklist

directory. Select a directory, then press <Enter> to accept it. The directory name is placed into the *Enter Source Directory Form* and a list of subdirectories under that directory is displayed. You can continue selecting subdirectories in this manner until there are no more in the path, or until you press <Esc> to use the path you've already selected.

Once you've entered a path into the *Enter Source Directory Form* (by typing it or by selecting it from the list), press <F2>. A graphical display of the directory tree that you selected appears (Figure 6-15)

Select Directories	
—	/ravi
+--	files
	+-- old
	+-- current
+--	programs
+--	9_21source
	+-- extra.cuts
	+-- junk

Figure 6-15 Graphic Tree Display

NOTE: If your source directory has no sub-directories under it, there will only be one branch (for example, /ravi) shown in the graphical display.

Highlight a directory name, then press **<Enter>** to display a list of files within that directory.

File Name	Date/Time	Size
program.c	11-19-92 12:02	29002
* formlib.c	11-19-92 12:02	15438
oper.c	11-19-92 12:02	10202
makefile	11-24-92 11:34	2009
main.c	11-24-92 11:34	5698

Figure 6-16 File list

Select files from the subdirectory list by marking them with the **<F5>** key ("marked" files have an asterisk (*) to the left). Press **<F2>** when you are finished marking files. You are returned to the directory tree where you can select another directory or press **<F2>** to get the *Point & Select Job Entry Form*.

NOTE: You can also use **<F5>** to mark complete subdirectories for back up.

Job Entry Form: Unattended Back Up to Tape (Point & Select)		
Tape Name: TAPE1	Mode: APPEND	Session Password:***
Error Log File: /tmp/files/report1		
EXCLUDE FILES		
*.RLS		
Follow Symbolic Links: NO		
Back Up Hidden Files: YES Back Up Special Files: YES Track Files: YES		
Verify Method: None		Delete Source Files: NO
Use Calendar To Schedule: NO		
Execute Job on 03/30/92 at 12:35		
Automatic Repeat Interval:	0 Months	0 Days 0 Hours 0
Backup Method: Complete: All Files		

Figure 6-17 Point & Select Job Entry Form

This form must be completed in order to schedule the job. This form is quite similar to the *Speed Entry Backup Job Form* that was explained in the first part of this section. All of the fields appearing on this form are present on the *Speed Entry Form*. Please see the explanations of the fields in the *Speed Entry* section. Since the graphical tree is used to select files and directories, the fields pertaining to directory selection are absent from this form.

When completing the form, please be aware that the file selection criteria in the following fields apply only to **directories** that were selected.

INCLUDE FILES:

BACK UP HIDDEN FILES:

BACK UP SPECIAL FILES:

BACKUP METHOD:

- NOTE:***
1. There is no script field on the *Point and Select Form*.
 2. Individual files that are marked will be backed up in all cases!

Press <F2> to schedule the job in the queue when the form has been completed.

6.3 Restore

Use *Restore* to copy files and directories to a hard disk from tape. This option works the same as the *Unattended Backup* option, that is, you can use the *Speed Entry* or *Point & Select* method to restore the files.

Since we already described using the *Speed Entry* method, the *Point & Select* method, and the job entry forms under *Unattended Backup*, we'll just describe the two restore forms in this section.

When *Restore* is selected from the *Unattended Operations Menu* (see Figure 6-3), the *Select Restore Method Menu* appears (same as Figure 6-4). You can select *Speed Entry* or *Point and Select* from this menu.

The *Unattended Restore Job Entry Forms* are similar to the ones used for unattended backup. The *Point and Select* method of restoring files is the same as the backup method except you must first choose a backup session from which to select files. After that, you select the files just as you did when you backed them up.

The *Speed Entry* and *Point & Select* forms are shown in the following two figures.

Job Entry Form: Unattended Restore From Tape	
Tape Name: TAPE1	
Restore Session Number: 3	Session Password: ****
Destination Directory: /tmp/files	
Report: /usr/home/file/report.2	
EXCLUDE FILES	INCLUDE DIRECTORIES
*.RLS	
Restore Hidden Files: YES	Restore Special Files: YES
Execute Job on 06/04/92 at 01:00 am	
Restore Method: Complete: All Files	
Create Script: NO	

Figure 6-18 Unattended Restore Form (Speed Entry)

Job Entry Form: Unattended Restore From Tape (Point & Select)

Destination Directory: /tmp/files

Report: /usr/home/file/report.3

EXCLUDE FILES

*.RLS

Restore Hidden Files: YES

Restore Special Files: YES

Execute Job on 06/04/92 at 01:00 am

Restore Method: Complete: All Files

6-19 Unattended Restore Form (Point & Select)

The fields on the two *Restore Forms* are described on the next few pages. There are three mandatory fields on the *Restore Forms*: **Tape Name** (*Speed Entry Form* only), **Restore Session Number** (*Speed Entry Form* only), and **Destination Directory** (*Speed Entry Form* and *Point & Select Form*). You must complete these fields when they appear in order to save and process the form.

NOTE: *Tape Name, Restore Session Number, and Session Password* do not appear on the *Point and Select Restore Job Entry Form*.

Restore Form Fields:

TAPE NAME: Enter the name of the tape to be used. This name must be the same as the name assigned to the tape when it was formatted. If you want to use a tape that is present in the drive, you may enter an asterisk (*) in this field.

RESTORE SESSION NUMBER: Each session on the tape is assigned a number by the backup program. Enter the number if you know it. Otherwise, you can obtain it by querying the FTS Database. See the *File Tracking System* section in this manual for more information on doing this.

SESSION PASSWORD: If a password was used for the backup, then it must be entered to restore that session. If the password is unknown, *root* can restore the session without the password. Passwords appear on the screen as asterisks (*).

DESTINATION DIRECTORY: Enter the destination directory path to which all files from the tape will be copied. You may use the <Ins> key/list method to enter this information. You may enter a new directory as the last directory in the path. ARCserve/Open will create this directory when the files are copied to the destination. This new directory will be the first level of the new destination directory tree. To restore the information from the tape to the directory from which it came, enter the original source directory.

REPORT: Enter a path and file name to create a report for this restore session. The report will contain a list of the files that were restored along with their sizes and attributes. Errors that occur during the restoration process are recorded whenever possible. You can use conventional UNIX commands to look at or print this file.

If you are restoring to a directory that will be created by ARCserve/Open, you cannot create the report file in that directory.

INCLUDE/EXCLUDE FILES: This is a toggle field. Below the toggle field is a text field where you can list files. If you select "INCLUDE", the files listed here will be restored. If you select "EXCLUDE", files listed here will not be restored. If the field is left blank, all files are restored.

When listing files, wild cards are accepted (e.g., *Fi*, C??, etc.). The text field can accommodate 16 entries, one on each line. Do not enter path specifications with the files or use the backslash (/) character.

INCLUDE/EXCLUDE DIRECTORIES: This is a toggle field. Below the toggle field is a text field where directories and subdirectories can be listed.

NOTE: This field does not appear on the *Point & Select form*.

The text field can accommodate up to 16 entries, one on each line. If you use this field, we refer to it as a "selective" restore.

If "INCLUDE" is selected, all directories specified here are restored along with any subdirectories stemming from them. If "EXCLUDE" is selected, directories and subdirectories listed here will not be restored.

If the field is left blank, all directories are included. You may not use "/" as the first character of your path.

An example of a directory structure is shown in the following figure.

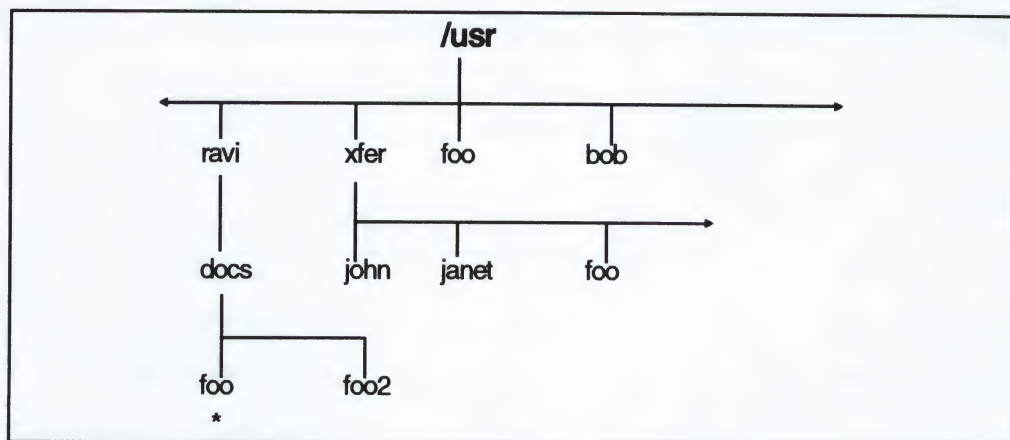


Figure 6-20 Directory Specification Example

To restore the files in the foo directory (shown with an asterisk), enter:

ravi/docs/foo

Specify the entire path, or enough of it to be specific. If you simply listed foo as the directory to include or exclude, all the foo directories would be included or excluded. You would have to specify ravi/docs to include or exclude only the ravi/docs directory.

RESTORE HIDDEN FILES: This is a toggle field. Choose "YES" or "NO". The default is "YES". If "NO" is selected, hidden files will be not be restored. Hidden files are files that start with a period (.), such as .profile.

RESTORE SPECIAL FILES: This is a toggle field. Choose "YES" or "NO". The default is "YES". If "NO" is selected, special files will be not be restored. See the previous section (Backup) for a discussion of special files.

EXECUTE JOB ON: Enter the date and time that the job is to be executed. Use the format *MM/DD/YY* for the date.

Where:

<i>MM</i>	=	month (1-12)
<i>DD</i>	=	day (1-31)
<i>YY</i>	=	last two digits of the year (00-99)

Use *HH:MM XX* for the time format.

Where:

<i>HH</i>	=	hour (00-12)
<i>MM</i>	=	minute (00-59)
<i>XX</i>	=	AM/PM

The default values are the current date and time at which you entered the screen.

RESTORE METHOD: Press <Ins> to display a list of methods from which to choose. Select a method from those listed below:

Complete: All Files - All files in the tape session will be restored regardless of time and date.

Incremental: Time Stamp (After) - A threshold date and time must be specified for this method. ARCserve/Open then compares all files in the tape session with this threshold.

Files with a date/time stamp later than this threshold are copied to the destination.

Incremental: Time Stamp (Before) - When this method is selected, a threshold date and time must be specified. ARCserve/Open then compares all files in the tape session with this threshold. Files with a date/time stamp earlier than this threshold are copied to the destination.

CREATE SCRIPT: This is a toggle field. Choose "YES" or "NO". The default is "NO". If "YES" is selected, a field appears in which you must enter a name for this script. In the future, you can re-call this form (with all of the information you just typed) by selecting its name from a list of scripts.

The advantage to creating a script is that you save time the next time you schedule this job. Rather than typing the information each time you run the job, you select the script name from a list and schedule it. Once created, the script contains all of the information needed to schedule the job.

NOTE: When a script is used, the execution date/time becomes the current date/time.

SCRIPT NAME: Enter a name for the script. The script is stored in the /usr/lib/arcserve/lib/scripts directory.

Press <F2> when the form is complete. You will be asked to confirm whether the job is to be entered in the queue. Choose "YES" to schedule the job. If "NO" is selected, you are returned to the form where you can make changes or press <Esc> to abandon it. If you press <Esc> to abandon the form, you are asked if you want to save the script. Choose "YES" to save the script, or "NO" to abandon the form and the script.

Once the job is scheduled, you are returned to the *Scheduled Jobs List* (see Figure 6-12). The *Restore* job appears in the queue and is executed by ARCserve/Open when the execution time is reached.

6.4 Job Administration

In addition to scheduling Unattended Backup and Restore jobs, you can also perform the following administrative tasks: modifying, deleting, or rescheduling jobs in the queue.

NOTE:

1. You can only change your own job. The *root* user can change anyone's job.
2. You can't change a job that has an "Active" status.

6.4.1 Modify a job form

When viewing the scheduled jobs in the queue (see Figure 6-12), select a job by highlighting it and pressing <Enter>. The *Job Form* for this job appears, along with the original information you typed. Make your changes to the form then press <F2> to execute the changes.

6.4.2 Reschedule a job

When viewing the scheduled jobs in the queue, highlight the job you want to change and press <F3>. The *Job Status Form* is displayed. Use this form to change the current status, "Ready" or "Hold", execution time, and execution date.

NOTE: This form is not available if the job you selected is active.

Current Status	
Queue: CHEY_A_Q	Job Status: HOLD
User: root	
Submission Date: 10/12/92	Execution Date: 11/12/92
Submission Time: 12:01 PM	Execution Time: 3:00 am

Figure 6-21 Job Status Form

The fields on the left hand side of the form are for information purposes and cannot be edited. These fields represent the information generated when the job was submitted. The fields that can be modified appear on the right hand side of the form and are explained on the following page.

JOB STATUS: The Status field is a toggle field; toggle between "HOLD" and "READY". A job that is on "HOLD" cannot be executed until the status is changed to "READY".

EXECUTION TIME and **EXECUTION DATE:** These fields have the same values as the **EXECUTE JOB ON/AT** fields seen on the *Job Entry Form*. See the explanations in the *Backup* section of this manual.

6.4.3 Delete a Job from the Queue

Use the key to remove a job from the queue. You are asked to confirm the deletion. Answer "YES" to delete the job. Answer "NO" to leave the job in the queue.

7. Attended Operations

Attended operations are operations that run in the foreground, so you can watch the progress. There are five Attended operations that you can perform:

- Counting the files in a directory
- Purging files
- Backing up files
- Restoring files
- Scanning a tape for session information

When *Attended Operations* is selected from the *Available Topics Menu*, the *Attended Operations Menu* will be displayed.

Attended Operations	
	Count
	Purge
	Back Up To Tape
	Restore From Tape
	Scan Tape

Figure 7-1 Attended Operations Menu

These menu options are discussed in the following sections.

7.1 Count

The *Count* option provides a convenient way of tallying the number of files, directories, bytes, and blocks in a directory tree. This option is useful for determining the amount of storage space a backup will need.

The *Attended Count Form* is shown in Figure 7-2. The fields are similar to those described in the *Unattended Backup* and *Restore* sections and have all been defined. See either of these sections for a description of these fields.

Job Entry Form: Attended Count	
Source Directory: /etc	
Report: /tmp/files/report.6	
INCLUDE FILES *.TMP *.BAK	INCLUDE DIRECTORIES
Count Hidden Files: YES	Count Special Files: YES
Create Script: NO	

Figure 7-2 Attended Count Form

When the form is complete, you have three choices: press <F2> to perform the job immediately, create a script and perform the job at a later time, or press <Esc> to abandon the form completely.

NOTE: You can create a script and still perform the job immediately.

To execute the job immediately, press <F2> and then confirm that you want to proceed. A screen that displays the real-time activity will appear. If you answered "YES" to create script, the script will be created as well. You can use the script the next time you select *Count* from the *Attended Operations Menu*.

To create a script and perform the job at a later time, choose "YES" to *Create Script*, name it, and then press <Esc>. When asked whether to save the script, choose "YES" and then press <Enter>. You can use the script the next time you select *Count* from the *Attended Operations Menu*.

To abandon the form completely (if you didn't choose to create a script), press <Esc>. When asked whether to discard the form, select "YES" and then press <Enter>.

7.2 Purge

The *Purge* option provides an effective way of deleting files and removing directories from your hard disk. The form fields and final display are similar to those described in previous sections. If you need help with the fields, see the descriptions under *Unattended Backup and Restore* earlier in this manual.

The *Attended Purge Form* is shown in the following figure.

Job Entry Form: Attended Purge	
Source Directory: /tmp	
Report: /usr/home/files/report.8	
INCLUDE FILES	INCLUDE DIRECTORIES
*.TMP	
*.BAK	
Purge Hidden Files: YES Purge Special Files: YES	
Purge Files With Date Stamps Earlier Than: 6/10/91	
Create Script: YES	
Script Name: cleanfiles	

Figure 7-3 Attended Purge Form

Caution: **Please be certain that the files specified in the form are indeed the ones you want to delete!**

When the form is complete, you have three choices: press <F2> to perform the job immediately, create a script and perform the job at a later time, or press <Esc> to abandon the form completely.

NOTE: You can create a script and still perform the job immediately.

To execute the job immediately, press <F2> and then confirm the deletion of files. A screen that displays the real-time activity will appear. If you answered "YES" to create script, the script will be created as well. You can use the script the next time you select *Purge* from the *Attended Operations Menu*.

To create a script and perform the job at a later time, answer "YES" to *Create Script*, name it, and then press <Esc>. When asked whether to save the script, select "YES" and then press <Enter>. You can use the script the next time you select *Purge* from the *Attended Operations Menu*.

To abandon the form completely, press <Esc>. When asked whether to discard the form (if you didn't create a script), select "YES" and then press <Enter>.

7.3 Back Up To Tape

This option is used to back up files in the attended mode. It works just like *Unattended Back Up* except that scheduling is not available. You may use either the *Speed Entry* or *Point & Select* methods to run the job. The *Speed Entry* and *Point & Select* methods used in *Attended Back Up To Tape* are identical to those used in *Unattended Backup*. Please see this section for a complete description of both methods and the fields on the screen.

The following two figures show you the *Attended Backup Speed Entry* and *Point & Select Forms*, respectively.

Job Entry Form: Attended Back Up To Tape		
Source Directory: /etc		
Tape Name: PROJECT	Mode: APPEND	Session Password: ****
Report:		
INCLUDE FILES	INCLUDE DIRECTORIES	
Follow Symbolic Links: NO		
Back Up Hidden Files: YES	Back Up System Files: YES	Track Files: YES
Verify Method: NONE	Delete Source Files : NO	
Backup Method: Complete: All Files		
Create Script: NO		

Figure 7-4 Attended Back Up To Tape Speed Entry Form

Job Entry Form: Attended Back Up To Tape (Point & Select)		
Tape Name: PROJECT	Mode: APPEND	Session Password: ****
Report:		
INCLUDE FILES		
Follow Symbolic Links: NO		
Back Up Hidden Files: YES	Back Up System Files: YES	Track Files: YES
Verify Method: NONE	Delete SourceFiles : NO	
Backup Method: Complete: All Files		

Figure 7-5 Attended Back Up to Tape Point & Select

When *Back Up To Tape* is selected from the *Attended Operations Menu* (see Figure 7-1) the *Selection Method Menu* shown in Figure 6-4 will appear.

Select the method you want to use. If you select *Speed Entry*, the *Speed Entry Job Entry Form* appears (See Figure 7-4). If you have scheduled jobs before, and created scripts for the jobs, the *Select Script File* list will appear first. Select a script from the list or use the default *BLANK FORM*. If you choose *Point & Select*, follow the directions in the **Unattended Jobs** section of this manual for selecting directories and files, then complete the job entry form.

When the form is complete, you have three choices: press <F2> to perform the job immediately, create a script and perform the job at a later time, or press <Esc> to abandon the form completely.

NOTE:

1. You can create a script and still perform the job immediately.
2. The *Create Script* option is not available on the *Point & Select Form*.

To execute the job immediately, press <F2> and then confirm that you want to continue. A screen that displays the real-time activity will appear. When the backup is complete, you are asked to confirm the deletion if you selected "YES" in the **DELETE SOURCE FILES** field. You may cancel the deletion at this time or proceed.

If you answered "YES" to *Create Script*, the script will be created as well. You can use the script the next time you select *Back Up To Tape* from the *Attended Operations Menu*.

To create a script and perform the job at a later time, choose "YES" to *Create Script*, name it, and then press <Esc>. When asked whether to create the script, select "YES" and then press <Enter>. You can use the script the next time you select *Back Up To Tape* from the *Attended Operations Menu*.

To abandon the form completely, press <Esc>. When asked whether to discard the form (if you didn't create a script), select "YES" and then press <Enter>.

7.4 Restore From Tape

This option is used to restore files in the attended mode. The following two figures show you the *Attended Restore Speed Entry* and *Point & Select Forms*, respectively.

Job Entry Form: Attended Restore From Tape	
Tape Name: PROJECT	
Restore Session Number: 1	Session Password:*****
Destination Directory:/usr/home/files	
Report: /tmp/files/report.9	
INCLUDE FILES	INCLUDE DIRECTORIES
Restore Hidden Files: YES Restore Special Files: YES Confirm Overwrites:NO	
Restore Method: Complete: All Files	
Create Script: NO	

Figure 7-6 Attended Restore Form (Speed Entry)

Job Entry Form: Attended Restore From Tape (Point & Select)	
Tape Name: PROJECT	
Restore Session Number: 1	
Destination Directory:/usr/home/files	
Report: /tmp/files/report.9	
INCLUDE FILES	
Restore Hidden Files: YES Restore Special Files: YES Confirm Overwrites:NO	
Restore Method: Complete: All Files	

Figure 7-7 Attended Restore Form (Point & Select)

Attended Restore works in the same way as *Unattended Restore*. You can use the *Speed Entry* or *Point & Select* methods to run the job. The *Speed Entry* and *Point & Select* methods used in *Attended Restore From Tape* are identical to those used in *Unattended Restore*. Please refer to this section for a complete description of both methods.

When *Restore From Tape* is selected from the *Attended Operations Menu* (see Figure 7-1) the *Selection Method Menu* shown in Figure 6-4 will appear.

Select the method you want to use. If you select *Speed Entry*, the *Speed Entry Form* appears. If you have scheduled jobs before, and created scripts for the jobs, the *Select Script File* list will appear first. Select a script from the list or use the default *BLANK FORM*. If you choose *Point & Select*, follow the directions in the *Unattended Restore* section of this manual for selecting directories and files, then complete the job entry form.

Before starting the job, insert the tape you want to use in the tape drive. You should know the tape name and session number before completing the job form or you may type an asterisk (*) in the tape name field to use the current tape.

When the form is complete, you have three choices: press <F2> to perform the job immediately, create a script and perform the job at a later time, or press <Esc> to abandon the form completely.

NOTE:

1. You can create a script and still perform the job immediately.
2. The *Create Script* option is not available on the *Point & Select Form*.

To execute the job immediately, press <F2> and then confirm that you want to continue. A screen that displays the real-time activity will appear. You are asked to confirm each overwrite if you selected "YES" in the **CONFIRM OVERWRITES** field.

To create a script and perform the job at a later time, choose "YES" to create a script, name it, and then press <Esc>. When asked whether to save the script, select "YES" and then press <Enter>. You can use the script the next time you select *Restore From Tape* from the *Attended Operations Menu*.

To abandon the form completely, press <Esc>. When asked whether to discard the form, select "YES" and then press <Enter>.

7.5 Scan Tape

When *Scan Tape* is selected from the *Attended Operations Menu*, the *Tape Scan Menu* is displayed (see Figure 7-8).

Scan Tape Menu	
Scan Sessions On Tape	
Session Report	

Figure 7-8 Scan Tape Menu

7.5.1 Scan Sessions On Tape

The first option, *Scan Sessions On Tape*, is used to list the sessions on a particular tape. Place a tape in the tape drive, select this option and press **<Enter>**. The tape will be scanned and the real-time screen shown in the following figure will appear.

Session Information		
Tape Name:	foo	Seq #: 1
Session #:	1	
Source Directory:	/tmp	
Owner Name:	root	
Backup Date & Time:	5/21/92	10:12:57
Press <Esc> to QUIT - Any key to continue...		

Figure 7-9 Session Information

The fields on the *Scan Sessions On Tape* report are explained below.

TAPE NAME: This is the name given to the tape when it was last formatted.

SEQ #: This is the sequence number of the tape. Even if the tape isn't part of a sequence of tapes, the number 1 will appear in this field.

SESSION #: This is the number of the session that is being scanned. The first session on tape is given the number 1, and the session number is incremented by 1 for each subsequent session.

SOURCE DIRECTORY: This is the complete path, with the name of the source directory that was backed up in this session.

OWNER NAME: This is the user who submitted the job.

BACKUP DATE & TIME: This is the date and time on which the session being scanned was backed up.

After the information for each session is displayed on the screen, press any key to display the next session. Press <Esc> to abandon the search and return to the *Scan Tape Menu*.

7.5.2 Session Report

The second choice on the *Tape Scan Menu* is *Session Report*. The session report lists all of the files/directories contained in a session. You specify the tape name and session number for which you want a report.

Select *Session Report* and press <Enter>. The *Scan Tape Session* form shown in Figure 7-10 appears.

Scan Tape Session
Tape Name: foo Session No: 2 Session Password: Session Report: /tmp/files/report.10

Figure 7-10 Session Report Specification Form

The fields are explained below:

TAPE NAME: This is the name of the tape that you want to scan. This field is mandatory. You must supply a tape name or enter an asterisk (*) to use the current tape.

SESSION NO: This is the number of the session for which you will generate a report. You must enter a number here.

SESSION PASSWORD: This is the password (if any) that was entered when the session was backed up. You must enter the password here before you can look at the information for this session. Root users can look at information for any session without supplying the password.

SESSION REPORT: This is a path and file name for the report that will be generated. The report will be in ASCII format, and you can use regular UNIX commands to view it or print it.

Once the form has been completed, press <F2> to generate the report. A real-time screen showing the progress of the scanning operation appears (see Figure 7-11). The report lists all the files and directories in the tape session you specified.

Scanning Files/Directories On Tape			
Tape Name:	test	Seq #: 1	Session #: 1
Target Directory:	/tmp/foo		
File Being Processed:			
Files Size:		Bytes	
Total # Files:			
Total # Bytes:			
Total # Blocks:			(One Block = 512 Bytes)
Connecting to Tape Drive....			

Figure 7-11 Session Report

All of the fields on this form are for the session/directory/file currently being scanned. The fields have been explained in previous paragraphs/sections. See the *Unattended Operations* section of this manual for field descriptions.

8. File Tracking System

ARCserve/Open's File Tracking System (FTS) Database keeps track of files and directories that are backed up by the ARCserve/Open program.

You can search the FTS Database for the location of specific files. You can then use the *Quick File Access (QFA)* method to restore the files. The *QFA Restore* method is a fast, efficient way of getting files back on your hard disk.

When *File Tracking System* is selected from the *Available Topics Menu*, the *File Tracking System Menu* is displayed.

File Tracking System	
	Generate Report
	Locate/QFA Restore
	Purge Records
	Merge Records
	File History

Figure 8-1 File Tracking System Menu

You can perform the following operations using these options: create customized reports, search for files and directories, selectively restore files and directories, purge records from the FTS Database, get a history for a single file, and merge database information from a tape with your FTS Database.

These functions are discussed in the next five sections.

8.1 Generate Report

ARCserve/Open FTS Reports are created and customized using the *Generate Report* option. When this option is selected, a list of all sessions in the database is displayed (see Figure 8-2). Each record has the results of a job that was processed, including all the file names that were copied, directories that were created, the destination of the files, and other details.

Date/Time	Source Directory	Tape Name/Seq#	Status
02-27-92 12:46	ROOT/tmp	mon_tape1	Completed
02-27-92 12:50	ravi/home/ravi	tues_tape2	Completed

Figure 8-2 Select Session Picklist

To generate a report, select a record by highlighting it and then pressing <Enter>. A search criteria screen appears (Figure 8-3) into which you enter a report file name (including path) and search patterns.

Search Criteria
Report File /tmp/reports/foo
Search Patterns

Figure 8-3 Search Form

The search patterns limit the number of records ARCserve/Open displays and helps narrow your search. For example, if you are only looking for files in the /usr/bin directory, you could enter "usr/bin/*" here. Only files meeting this criteria will be displayed.

Press <F2> after you finish filling in the search criteria form to generate the report. You can use standard UNIX commands to view or print the report file. The following figure shows a sample *FTS Report*.

***ARCserve/Open Summary Listing (RESTORE) *** Mon Apr 27 15:22:01 1992					
Tape Name	:	tape4			
Seq#	:	1			
Session #	:	234			
Source Directory	:	/usr/ravi			
Owner Name	:	root			
Backup Date & Time	:	04/14/92	19:00		
UNIX Host Name	:	gallium			
.profile		33	03/22/92 14:06	-rw-r---	
.sh_history		1552	03/24/92 15:15	-rwx----	
mbox		776	03/22/92 09:05	-rw-----	
.exrc		106	03/16/92 16:14	-rw-----	
mail	drwxr-xr-x				
mbox.old		280459	02/12/92 09:54	-rw-----	
mbox.old		203003	02/14/92 06:24	-rw-----	
mbox.old		114005	02/11/92 15:59	-rw-----	
mbox.old		200914	02/17/92 13:45	-rw-----	

Figure 8-4 FTS Report

8.2 Locate/QFA Restore

Use this option to find the location on a tape of specific files and directories. You do so by first selecting a session and then searching that session for files and directories.

The FTS Database contains information such as where files are located on tape, the file's size, time and date stamps, and original location of the file on the hard disk.

NOTE: Backup information is recorded in the File Tracking System if you selected "YES" in the *Track Files* field on the *Backup Job Entry Form*. If you selected "NO" for *Track Files*, you can use the *Tape Merge* option (Section 8-4) to combine a tape's records with the FTS database.

After you've located the file(s), use the Quick File Access (QFA) method to restore them.

8.2.1 Locating files

When you select *Locate / QFA Restore* from the *File Tracking System Menu*, a list of all sessions (records) in the FTS Database is displayed as shown in Figure 8-2.

Use the <Arrow> keys to move up and down the list and then press <Enter> to select a session.

A *Search Form* appears into which you enter a report file name (including path) and search patterns.

Search Criteria
Report /tmp/files/report.6
Search Patterns usr/home/ravi/*

Figure 8-5 Search Form

You can create a report file for the search results if you think there will be a lot of information. Use standard UNIX commands to view this file after the search is over.

The search patterns limit the number of records ARCserve/Open displays and helps narrow your search. For example, if you are looking for all versions of a file called *program*, you would enter "program" here. Only files meeting this criteria will be displayed. You can specify up to 12 patterns (wildcards are accepted) to help find the data. Save the *Search Form* when you are finished by pressing <F2>.

A *Search Results Screen* appears (the following figure). This screen lists the filenames, dates on which they were last modified, and their sizes.

Filenames	Date	Time	Size
/usr/home/ravi/temp	04/12/92	21:26	310,020
/usr/home/ravi/files/program.c	05/22/92	10:23	89,873
/usr/home/ravi/.profile	06/0-2/92	02:01	630
/usr/home/ravi/.kshenv	10/16/92	17:00	3116
/usr/home/ravi/foo	10/16/92	17:00	60,000
/usr/home/ravi/lib	10/16/92	17:00	30,000
/usr/home/ravi/stop.c	10/19/92	22:00	6,789

Figure 8-6 Search Results

8.2.2 Using QFA to restore the files

At this point, you can select specific files for restoration. Use the <Arrow> keys to scroll through the list of files and select as many files as you want by marking them with the <F5> key. Press <F2> after you finish selecting files.

You are asked to insert the tape that contains the files. Put the tape into the drive and choose "YES". The *Restore Selected Files To A Directory Form* appears.

Restore Selected Files To A Directory	
Tape Name: TAPEC	Restore Session Number: 2
Destination Directory: /usr/ravi	
Report: /tmp/reports/rest.rpt	

Figure 8-7 Restore Files Form

Type the destination directory path and name, or press **<Ins>** to select one from a list. Also, enter a path and file name where ARCserve/Open can put a report of this operation. The tape name and session number are automatically entered by ARCserve/Open based on the files selected for restoration.

Press **<F2>** after you are finished with this form and confirm that you want to start the operation. The files are restored to the directory you selected and the process is displayed in the following form.

Restoring File/Directories From Tape	
Tape Name: Test1	Session #: 1
Tape Directory:	
File being processed:	
File Size:	Bytes
Total # Files: 10	
Total # Bytes: 60098	
Total # Blocks:	(One block = 512 Bytes)

Figure 8-8 FTS Restore Real Time Display

Press any key after the job is finished.

8.3 Purge Records

Use this option to remove records for an entire tape from the FTS Database. You must be *root* to perform this operation.

If there is a chance that you may need these database records at a later date, back up the FTS Database before purging any records from it. The database files are located in the */usr/lib/arcserve/data/FTS* directory.

CAUTION: Remove FTS records using the *Purge Records* option only. If you use UNIX commands to edit the FTS file, you risk corrupting the entire FTS Database.

To Purge FTS records, select the *Purge Records* option from the *File Tracking System Menu*. A *Purge Records For Tape Form* appears. Type the name of the tape for which you wish to purge records. FTS records for this tape will be removed from the database.

Purge Records For Tape
Purge Records For Tape Name: tape 1
Delete Database Records prior to:

Figure 8-9 Purge Records For Tape Form

When the form is complete, press <F2>. You are requested to confirm the purge. Answer "YES" and press <Enter>. The records will be removed as specified.

8.4 Merge Records

Use this option to merge FTS records from an ARCserve/Open backup tape with your FTS Database.

This option is especially useful for restoring your FTS Database in the event that it becomes corrupt or otherwise unusable. Even if you lose your FTS Database completely, you can rebuild it as long as you have the backup tapes. This option is also useful for building a copy of someone else's FTS Database on your system, thus giving you access to their files.

To merge tapes, select *Tape Merge* from the *File Tracking System Menu*. A screen appears asking you to insert a tape. Put the tape in the drive and choose "YES". If you are merging a single session from tape, specify the session number.

Merging File/Directories From Tape	
Tape Name:	tape 4
Tape Directory:	/tmp
File being processed:	
File Size:	Bytes
Total # Files:	10
Total # Bytes:	
Total # Blocks:	(One block = 512 Bytes)

Figure 8-10 Tape Merge Real-Time Display

A real-time display shows you the information being copied to your FTS Database.

When the process is complete, the tape you merged will be part of your FTS Database. You can restore files from the tape to your hard disk.

8.5 File History

Use *File History* to display backup information for a single file. You specify a file name and ARCserve/Open displays all the transaction data for the file. You can also restore any version of the file shown in the *File History Report*. This option is especially useful if you accidentally lose a file on your hard disk, and you want to restore just that file from tape.

To get a file history for a single file, select *File History* from the *File Tracking System Menu*. A form appears into which you enter the short file name.

Enter the Short File Name
File Name: hosts

Figure 8-11 Select a File Name

For example, if you are looking for a file called *program.c*, enter *program.c* then press **<F2>**. The *File History Report* appears. This report contains the following information about the file:

- tape name and sequence number
- session number
- file name and full source path
- date and time it was backed up
- size in bytes of the file

To restore the file, use the **<Arrow>** keys to highlight the file and then press **<Enter>**. A screen appears asking you to put the appropriate tape into the tape drive. Insert the tape and then press **<Enter>** to start the restoration.



9. UNIX Shell

Selecting *UNIX Shell* from the *Available Topics Menu* allows you to temporarily leave ARCserve/Open and return to UNIX.

Select this option and press **<Enter>**. You will then be at the UNIX command line and your prompt will look like the following:

ARCserve#

Execute any other commands and when finished, type the following command:

exit

<Enter>

The *Available Topics Menu* appears on your screen.

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User Comments

Cheyenne is always looking to improve its products and therefore, we would like to hear your comments!

Please let us know about inaccuracies, areas that could use more information, unclear instructions, and ways to improve our written manuals and on-line help. Of course, suggestions about the software are always welcome.

You can address these suggestions to:

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THANK YOU!

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